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Past and future of burden sharing in the climate regime: Positions and ambition from a top-down to a bottom-up governance system

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Keywords: UNFCCC, Mitigation, Negotiations, Burden sharing, Text analysis, Coalitions.

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1. Introduction

"The Paris Agreement marks a decisive step forward in the gradual process of blurring the categories of countries. This shift renders the UNFCCC annexes irrelevant" (Maljean-Dubois 2016: 159). But are they really?

In the negotiations towards a post-2020 climate agreement, a crucial area of debate was how to share the burden of climate change mitigation across states. Traditionally, mitigation was considered essentially as an obligation of the developed countries: Both under the 1992 UN Framework Convention on Climate Change (UNFCCC) and under its 1997 Kyoto Protocol, only the group of OECD and former Soviet Union states listed in "Annex I" to the Convention had a commitment to reduce its greenhouse gas emissions. All other states – those not listed in Annex I – were considered to be developing countries and exempted from mitigation obligations, in recognition of their need to overcome poverty, and of their low historical responsibility for climate change.[1] This differentiation of responsibilities was codified in the principle of "Common but Differentiated Responsibilities and Related Capabilities" (CBDR&RC) established in Article 3.1 to the Convention (Rajamani 2006).

This strict separation of responsibilities was maintained in the climate regime until quite recently, despite changing economic and environmental realities. Starting with the 2007 Bali Action Plan, it slowly became clear that the negotiations were progressing towards a system with more meaningful participation of developing countries in mitigation. The Bali Action Plan introduced the notion of Nationally Appropriate Mitigation Actions (NAMAs) by developing countries, which were voluntary and subject to financial support. Negotiations for a post-2020 agreement started in 2012 with a mandate to reach a "protocol, another legal instrument or an agreed outcome with legal force under the Convention *applicable to all Parties*" (UNFCCC 2012, emphasis added). This was interpreted as a mandate to open up the strict differentiation of responsibilities and to reach an agreement in which all states contribute to mitigation (Winkler and Rajamani 2013).

The 2015 Paris Agreement represented the culmination of this process and arguably ended the long-standing Annex I – non-Annex I dichotomy. Differentiation is applied in different ways across thematic areas including mitigation, adaptation, finance, technology, capacity building and transparency, and in a pragmatic rather than ideological or politicized way (Rajamani 2016). While all parties are obliged to contribute to mitigation, each of them proposes the type, scope and stringency of its own contribution in a bottom-up pledge and review system operationalized through the Nationally Determined Contributions (NDCs). Such self-differentiation introduced a more nuanced and flexible way of addressing countries' differing levels of responsibility and capacity than the old annex-based system (Voigt and Ferreira 2016). It entails a new understanding and operationalization of the principle of CBDR&RC, and thus a new way of sharing the burden of addressing climate change. By offering countries the opportunity to define their commitments on their own terms, the Paris Agreement allows mitigation

[1] Nonetheless, the UNFCCC also contains more qualitative mitigation-related obligations for all parties: Article 4.1b mandates all parties to formulate, implement, publish and update national climate mitigation programmes, while Article 4.1c mandates them to promote and cooperate on technology development, application, diffusion and transfer for climate change mitigation.

to become better aligned with countries' development priorities and potentially to turn into an opportunity rather than a burden (Obergassel et al. 2015).

This paradigmatic institutional change provides us with the opportunity to study whether key countries' positions regarding burden sharing of mitigation commitments have actually changed as a result. Has the Paris Agreement been accompanied by a new way of thinking regarding burden sharing? Are the Convention's Annexes really "dead" in the minds of negotiators? Do countries in favour of abolishing the Annex I – non-Annex I divide also propose more ambitious climate policies? I focus on two groups of developing countries that are at opposite extremes in their positions: the Independent Association of Latin America and the Caribbean (AILAC), a group of progressive Latin American countries arguing for more comprehensive agreements to address climate change; and the Like-Minded Developing Countries (LMDC), a coalition that aims to uphold the regime's differentiation between developed and developing countries (Blaxekjær and Nielsen 2015).

The focus on these two coalitions is driven by several considerations. First, coalitions play a central role in multilateral negotiations in general, and the climate negotiations in particular. Coalitions, defined as sets "of parties who coordinate explicitly among themselves and defend the same position" (Odell 2013: 386), usually fulfil two goals in a negotiation. On the one hand, they help to reduce complexity: When close to 200 countries are involved in a negotiation, it is easier to reach an outcome if these numbers are reduced to just a handful of groups (Dupont 1996; Bhandary 2017). On the other, they increase their members' influence and negotiating power by pooling resources and expertise and by showing strength in numbers (Dupont 1996). Despite this relevance, most research on coalitions consists of case studies of individual coalitions, or of individual negotiation rounds. There is little comparative research over time or across coalitions. In this study I aim to do both.

Second, as will be detailed in Section 3, LMDC and AILAC are very different groups in terms of their size, heterogeneity, and positions in the negotiations. This allows me to explore how such widely different groups react to the same institutional change described above.

Third, LMDC and AILAC both emerged in 2012 as a result of the fragmentation of the main developing country coalition in the climate negotiations: the Group of 77 and China (G77). While the G77 has always been a very heterogeneous group, the climate-relevant differences in emissions and income levels have grown strongly over time (Kasa et al. 2007; Vihma et al. 2011). This increasing heterogeneity, along with the ever-expanding negotiation agenda, has resulted in the emergence of several new and overlapping coalitions of developing countries (Roberts 2011; Klöck and Castro 2018). Among these new groupings, LMDC portrays itself as being closely aligned with G77 and as a defender of developing countries' interests in the UNFCCC (Blaxekjær and Nielsen 2015). In contrast, AILAC presents itself as a bridge-builder between Northern and Southern interests (Blaxekjær and Nielsen 2015). It is thus substantively interesting to see whether the traditional G77 positions continue to be heralded by LMDC along the pre- and post-Paris era.

A few scholars have started to analyze the positions and narratives adopted by AILAC and LMDC in the climate change negotiations. Blaxekjær, Nielsen and colleagues (2015; 2016) applied narrative policy analysis to study the positions of several new country coalitions under the UNFCCC, including AILAC and LMDC. Audet (2013) maps the positions of nine coalitions on climate justice, identifying three broad types of discourses. While this

research is based on statements delivered before AILAC and LMDC were created, it identifies an "Informal Group of Latin American Countries" which seems to be a predecessor to AILAC. Watts and Depledge (2018) compare the positions, strategies and success of AILAC and ALBA (the Bolivarian Alliance for the Peoples of Our America), a group of left-oriented Latin American countries that started to engage with the climate negotiations in 2009. While these are very valuable contributions, they do not assess the evolution over time of these coalitions' positions, particularly in relation to the change in the regime's institutional setting, and do not (or to a very limited extent) assess potential differences among their members. Such comparisons require a more systematic approach to analyzing negotiation positions.

In this article, I seek to fill this gap by using a combination of quantitative and qualitative content analysis tools in order to compare the coalitions' and their members' positioning and discourses over time, coupled with a brief assessment of the extent to which such positioning matches their own level of ambition. I rely on a large corpus of 423 written position statements submitted to the UNFCCC by these coalitions or their members between 2007 and 2018. I begin by describing the factors that may affect coalitions' positions in the climate change negotiations, before proposing a set of testable implications for AILAC and LMDC. After presenting the data and methods used for the analysis, I describe and discuss the results, and draw conclusions about the evolution of AILAC's and LMDC's positions regarding burden sharing of mitigation and their related ambition.

2. What drives coalition positions in the climate change negotiations?

Countries join coalitions in order to more effectively defend their own national interests in the international negotiation process. Through coalition building, they gain political power through numbers, pool personnel resources and expertise, and can achieve better coverage of the negotiation process (Gupta 2000). Similar interests and positions, as well as shared values, a common ideology or a sense of group identity have been posited as factors leading to coalition building and maintenance (Costantini et al. 2007; Bhandary 2017).

Nonetheless, coalitions in the climate change negotiations have not necessarily emerged on the basis of similar *climate-related* preferences. The G77, for example, was established already in the 1960s, with the goal of representing the economic interests of developing countries at the UN Conference on Trade and Development. Other coalitions are based on geographic location (e.g. the African Group of Negotiators) or on political association (e.g. the EU and ALBA).

It can be argued that two contrasting strategies are at the heart of coalition building: building strength in numbers, by creating a large group that provides political support, or gaining strength by getting together with truly like-minded partners on a more issue-specific basis (Gupta 2000; Chasek and Rajamani 2003). In the first case, the increase in bargaining power might come at a price if the preferences of the individual members are heterogeneous, because coalition positions are necessarily a result of compromise between their members. In the second, while such groups are likely to be smaller, they will be more homogeneous and cohesive and therefore likely to be more effective (Chasek and Rajamani 2003).

In both cases, however, the coalition position emerges from the preferences and interests of its members. While such preferences are usually assumed to remain constant during the course of a negotiation interaction (Frieden 1999), the long history of the climate change negotiations has led to substantial changes in countries' domestic economic and political landscapes, in the issues being discussed, and in the climate regime itself. Countries' preferences and positioning have thus evolved as they have discovered interests related to more specific issue-areas. For example, countries with large tropical forests have found common interests related to the use of forests to capture and retain carbon dioxide from the atmosphere (Bhandary 2017).

The climate regime – the institutional context of the negotiations – changed substantially with the adoption of the Paris Agreement, from a top-down regime based on negotiated mitigation targets for a small group of countries, to a bottom-up one based on self-determined mitigation contributions by all countries. This new paradigm of universal participation is likely to entail costs for those countries that were not obliged to reduce emissions under the old regime, and these costs will be higher the more carbon-dependent their economies are. We would thus expect such countries – and their coalitions – to express resistance to this change in their negotiation positions. Universal participation in mitigation also entails benefits for those countries that are most vulnerable to climate change, as it is expected to deliver stronger emission reductions overall than an agreement with narrower coverage such as the Kyoto Protocol.

3. LMDC and AILAC in the climate change negotiations

A product of the increasing disagreements within the G77, the traditional grand coalition of developing countries, LMDC and AILAC both emerged in 2012, shortly after the UNFCCC parties decided to start a negotiation towards a new agreement to deal with climate change after 2020, in which all countries would be expected to contribute to mitigation. This new negotiation process became known as the ADP – the Ad Hoc Working Group on the Durban Platform for Enhanced Action, which in 2015 concluded with the adoption of the Paris Agreement.

LMDC held its first official meeting in October 2012. This group heralds itself as being closely aligned with the G77 and as representing the key interests of developing countries in the UNFCCC. Accordingly, one of its key positions recognized in the existing literature is that "universality" as mentioned in the ADP's mandate does not mean the same as uniformity. Thus, the differentiation between developed and developing countries' contributions should remain (Blaxekjær and Nielsen 2015). For these reasons, I expect LMDC to adopt a discourse that highlights differentiation, the relevance of the Convention's annexes, and the leading role that developed countries should take in mitigation, given their historical responsibility, in line with the traditional G77 positions (Kasa 2007: 116). Such discourse, while always part of LMDC members' positions, is expected to become even more pronounced after adoption of the ADP in December 2011, because the ADP poses a real threat to the traditional differentiation between Annex I and non-Annex I parties to the Convention.

LMDC is a rather large and very heterogeneous group, and its membership is not fixed. It brings together some key members of the G77, among them large emitters like India and China, along with several oil-dependent economies such as Saudi Arabia, Qatar and Kuwait, and several poorer and vulnerable developing countries,

including Bolivia, the Democratic Republic of Congo and Sudan. Up to 41 different countries have been listed in the different position statements submitted to the UNFCCC in the name of LMDC, but only a subset of them seems to be consistently active within the coalition (Blaxekjær et al. 2016).[2] Several LMDC members also belong to ALBA, a group that holds ideologically-driven positions that reject capitalism and neoliberalism, while emphasizing the historical responsibility of developed countries for climate change and their resulting "atmospheric debt" (Watts and Depledge 2018). Given the prominent role of oil-dependent economies and other large emitters, and a discourse that highlights the North's responsibility for climate change, I do not expect LMDC members to adopt very ambitious climate change mitigation policies under the Paris Agreement. Due to the heterogeneity within the group, however, I expect there to be relatively stark differences in discourse and level of ambition between its members.

AILAC, in contrast, was officially constituted in December 2012, but its members had started to coordinate negotiation positions several years earlier. AILAC sees itself as building "bridges between the different negotiation groups, increasing trust and broadening the space for consensus building" (AILAC n.d.). I thus expect AILAC and its members to increasingly adopt a discourse that relativizes differentiation, dismisses the relevance of the Convention's annexes, and moves towards highlighting the collective responsibility of all countries for mitigation, while still maintaining developing countries' need for financial and technological assistance in order to achieve the Convention's goals. This discourse is expected to evolve over time in the run-up to the Paris Agreement.

AILAC currently groups eight Latin American countries with quite progressive views regarding climate politics, based on a framing that views climate change policy as an opportunity rather than as a burden (Watts and Depledge 2018). Several AILAC members also consider themselves as particularly vulnerable to climate change. AILAC's core members all have centrist or centre-right governments, supportive of market-based mechanisms for climate change mitigation.[3] It is thus a small, homogeneous group with much more similar preferences and positions than LMDC. Accordingly, I expect AILAC members to have a more homogeneous position regarding climate change mitigation. In line with their discourse, and also with their own perceived vulnerability and their expectation to gain from stronger mitigation by all countries, I expect AILAC members to adopt comparatively strong mitigation policies under the Paris Agreement.

Table 1 below summarizes the expectations for AILAC and LMDC resulting from the discussion above.

[2] The countries that have at least once subscribed to a written submission by LMDC are: Algeria, *Argentina*, Bahrain, *Bolivia*, *China*, Comoros, Democratic Republic of Congo, *Cuba*, Djibouti, Dominica, *Ecuador*, *Egypt*, *El Salvador*, Ghana, *India*, *Iran*, Iraq, *Jordan*, Kuwait, Lebanon, Libya, *Malaysia*, Maldives, *Mali*, Mauritania, Morocco, *Nicaragua*, Oman, *Pakistan*, Paraguay, *Philippines* (left the group in 2014), Qatar, *Saudi Arabia*, Somalia, Sri Lanka, *Sudan*, Syria, Thailand, Tunisia, *Venezuela*, Yemen (Blaxekjær et al., 2016). The countries written in italics above are those with clearly active roles in the coalition, such as delivering statements on behalf of LMDC.

[3] AILAC's founding members are Chile, Colombia, Costa Rica, Guatemala, Panama and Peru. Paraguay and Honduras joined in 2015. Paraguay is the only member to both, AILAC and LMDC. Mexico and the Dominican Republic are very close to AILAC and its work, without being actual members.

Table 1 Summary of expectations

Coalition	LMDC	AILAC
Discourse's main topics	Differentiation, relevance of Convention's annexes, leading role and historical responsibility of developed countries	Responsibility for mitigation is shared by all parties, differentiation not tied to Convention's annexes
Evolution in discourse pre- and post-Paris	On average, rhetoric on differentiation becomes more pronounced from 2012 onwards	Change, already before Paris, towards more progressive views
Level of ambition under Paris Agreement	Weak	Strong
Heterogeneity	High heterogeneity in discourse and level of ambition, reflecting members' differences	Low heterogeneity in discourse and level of ambition

4. Data and methods

4.1 Data

The analysis is based on a corpus of 423 written position statements (or "submissions") submitted to the UNFCCC negotiations by AILAC and LMDC, as well as their individual member countries and subgroups of members in the period 2007-2018. I also include statements that were made explicitly by AILAC or LMDC together with other countries or coalitions, but exclude statements made by individual member countries together with non-member countries. The corpus includes all English-language, machine-readable submissions made to seven UNFCCC negotiation bodies that were active in the relevant time period. All documents were downloaded from the UNFCCC website.

These submissions cover all issues under negotiation in the period of analysis, including, inter alia, mitigation (111 submissions), adaptation to the impacts of climate change (80), the provision of finance to developing countries (72), the use of market mechanisms to facilitate mitigation (56), reaching a shared vision for a global climate goal (48), or the organisation of the negotiations (45 submissions). Many submissions cover several of these topics. This full corpus is used for a first quantitative analysis of the main issues driving the positions of AILAC and LMDC countries.

In a second stage, a subset of the texts, which focuses on mitigation-related issues, is used for a qualitative analysis of positions on burden sharing and differentiation. This subset consists of 165 texts, obtained from the full corpus of submissions above, that focus on mitigation, general principles that should guide climate action, a shared vision for a global climate goal, and open position statements. The headings of the submissions and of their subsections

were used to identify the topic they focus on. Only the relevant subsections of each submission were kept in this smaller corpus. It is expected that this subset better reflects the coalitions' positioning regarding burden sharing of mitigation.

Table 3 in the Appendix provides an overview of the documents contained in the full and the mitigation-focused corpora.

4.2 Methods: From words to discourses

Already in the 1970s, Williams (1976) made the link between keywords and discourses, even though he did not discuss specific methodological tools for doing so. Generally speaking, keywords are words that offer a key to the interpretation of a text. From a quantitative point of view, keywords are those whose frequency in a collection of texts (or "corpus") is statistically significant when compared to a reference, such as a standard corpus. Such keywords do not need to be single words: sometimes longer expressions may have a specific meaning of their own. Once these keywords (or key-phrases) are identified, they need to be explained and put in context. One way to do this is to analyse their co-occurrence with other words or expressions (Bondi 2010: 3).

Keywords can be a useful way of studying discourses, by looking at language use beyond the sentence, towards the ideological assumptions and social practices associated with it. Keywords and key-phrases can thus point towards the writer's position and identity (Bondi 2010: 7). In the context of this article I am concerned with the positions of the coalitions in the negotiations and with their ideological basis, and thus use a partly quantitative, partly qualitative keyword approach to assess these. By choosing such an approach I seek to simplify the assessment of actors' positions in the negotiations, as it allows us to systematize the assessment of a larger group of texts without needing to read and code them all by hand.

In a first step I use a text-driven approach to identify the key words or expressions that distinguish the language used by AILAC and LMDC in their submissions. As reference I rely on the whole corpus of 423 submissions by these coalitions and their members. I use a statistical technique called keyness analysis, which applies a likelihood ratio test of the frequency of all words in the two sets of texts, as suggested by Dunning (1993).[4] I identify the 20 keywords that are most distinctive of AILAC's and LMDC's language, respectively, and discuss the extent to which these keywords relate to differentiation, thereby testing my expectations regarding the coalitions' discourses' main topics.

To assess the evolution of discourses over time, I structure the analysis into three time periods. A pre-2012 period covers the time before both coalitions officially formed, and before the negotiations towards the Paris Agreement started. The submissions in this period were thus made by individual members of the groups or by subgroups of

[4] Before carrying out the analysis, I remove all standard stopwords: words used very frequently that carry little meaning, such as articles ("the", "a") or prepositions ("in"). I also remove numbers, symbols, URLs and punctuation, and the names of the coalitions and their member countries. As a final pre-processing step I build key-phrases by putting together the forty compounded expressions most frequently found across all texts. The analysis was carried out with the package *quanteda* in R (Benoit et al. 2018).

members. They provide evidence of these countries' pre-existing ideas regarding differentiation, before the mandate for a "universal" agreement was introduced. A pre-Paris period covers the negotiations towards the Paris Agreement – when most critical decisions on differentiation were made –, from 2012 up to December 2015. Finally, a post-Paris period covers the years 2016-2018, when detailed rules for implementation of the Paris Agreement were discussed. While the discussion in this period is expected to be more technical and less political, I expect that differentiation still plays a role in defining these rules.

In a second step I use a dictionary-based approach to analyse how the relevance of specific words used in the negotiations in relation to differentiation varies between and within the groups and over time. Table 2 displays the dictionary, which was built on the basis of own knowledge of the negotiations, an exploratory reading of submissions by members of both groups, and a thesaurus search for terms related to "collective" effort. In addition to keywords related to the idea of differentiation, the dictionary contains entries that denote several justifications for such differentiation (the principles of equity and CBDR, the existence of such differentiation in past agreements, and the historical responsibility of developed countries), and also an entry to reflect the idea that mitigation should become a collective effort by all parties.

Table 2 Dictionary of differentiation-related words and expressions

Concept	Search terms
Differentiation	*annex*, differentia*, developing, developed
Principles	principle*, cbdr*, equit*
Past agreements	convention*, kyoto*
Historical responsibility	historical*
Collective effort	all_parties, all_state*, all_countr*, collective, shared, joint, mutual, concerted

Note: The asterisks are used to allow the search algorithm to include all results that might have additional characters at the end (and/or the beginning) of the respective word. Underscores are used to join important compounded expressions.

This dictionary-based analysis is complemented with a qualitative analysis of AILAC and LMDC's discourses regarding mitigation and differentiation, carried out on the basis of the 165 submissions more specifically related to mitigation.

In a final step, I use existing assessments of countries' proposed climate plans to discuss the extent to which their discourses on mitigation are in line with their level of ambition. I rely on data from Holz et al. (2018), the NDC

Explorer (Pauw et al. 2016), and the Climate Action Tracker, an online tool that evaluates countries' mitigation commitments, developed by Climate Analytics, Ecofys and NewClimate Institute.[5]

5. Results

5.1 Evolution of AILAC and LMDC's key language over time

Figures 1 to 3 show the top 20 words that distinguish the texts produced by AILAC, its members or subgroups, from those produced by LMDC, its members or subgroups, for each of the three time periods.

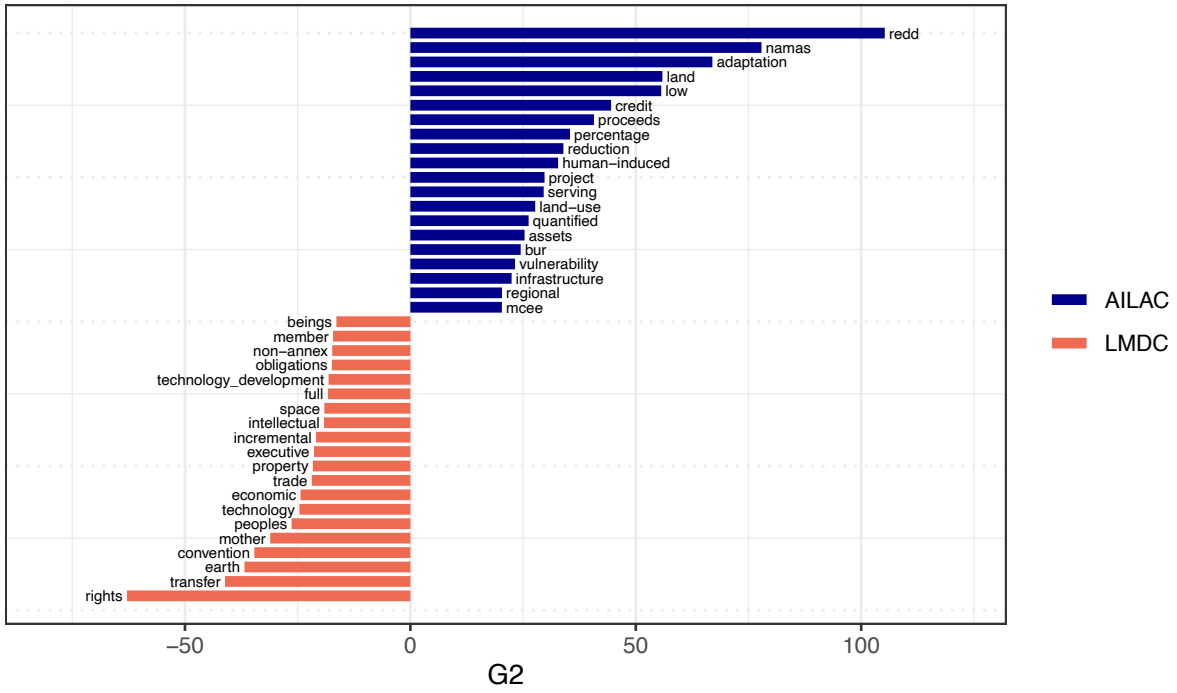
In terms of the main topics that distinguish LMDC and AILAC (expectation 1), even within this broad corpus comprising submissions related to many topics, the graphs provide evidence that LMDC countries tend to use language that is clearly related to the differentiation between developing and developed countries. This language includes words and expressions such as "annex" or "non-annex", "developed country parties", "developing country parties" and "differentiated", but also references to the "convention", which are frequently used to invoke its principles, structure and annexes, and to "equity". References to "support", including the provision of "technology" "transfer" and "finance" (to cover the "full" "incremental" costs incurred by developing countries) also differentiate LMDC's from AILAC's language.

In contrast, AILAC uses a more varied language that seems to be more technical, with more references to "carbon" and "reductions", and to the process and means for achieving them ("NAMAs" (nationally appropriate mitigation actions), "mechanism", "contributions", "legally" "binding", "results-based", "ambition").

In addition, members of both groups frequently use language that addresses other topics they care about. Members of LMDC, for example, often refer to respect for "Mother" "Earth", which is a typical component of ALBA's discourse (Watts and Depledge 2018), and to "response measures", which alludes to the need to address the negative impacts of climate policies on carbon-dependent economies. Members of AILAC more often refer to "REDD" (reducing emissions from deforestation and forest degradation), which is an important issue for several of them, including Costa Rica, Panama, Colombia and Peru, and to terms related to carbon markets, such as "credit", share of "proceeds" or "units".

[5] https://climateactiontracker.org/about/.

Fig. 1 Keyness of words, pre-2012 period



Note: “bur” stands for "Biennial Update Reports" to be submitted by developing countries to update their national greenhouse gas inventories and provide information on mitigation actions, needs and support received. “mcee” stands for “Mechanism for Carbon-Efficient Economies”, which is a new type of market mechanism proposed by Colombia.

Fig. 2 Keyness of words, pre-Paris period

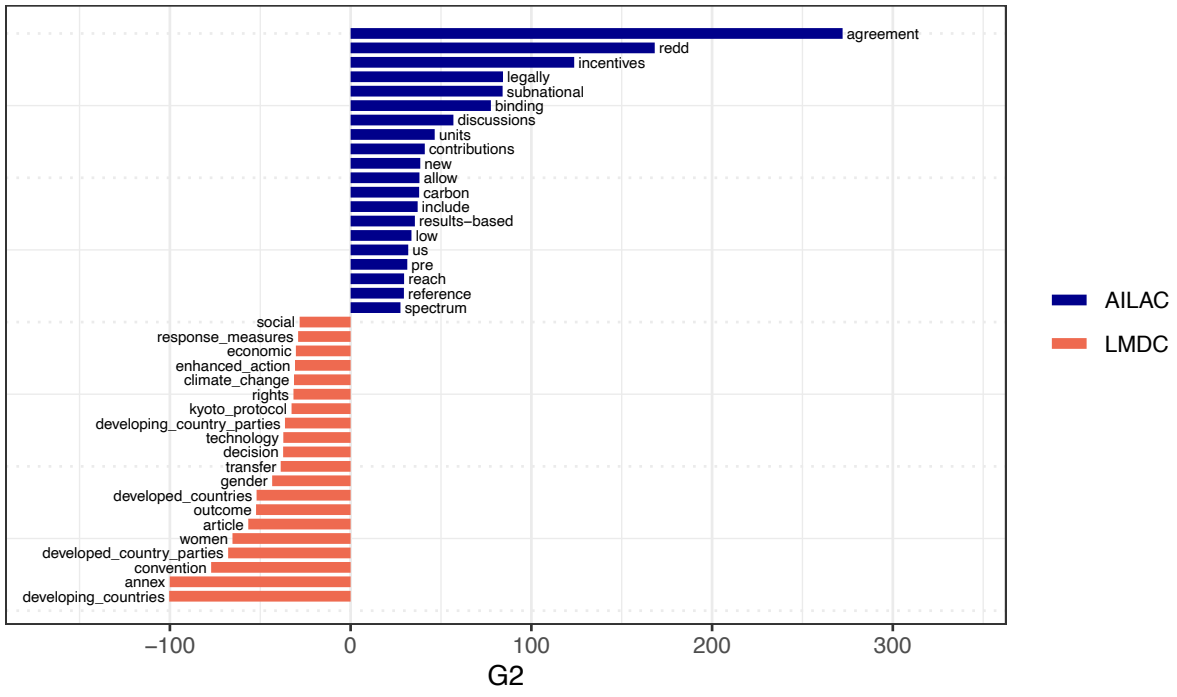
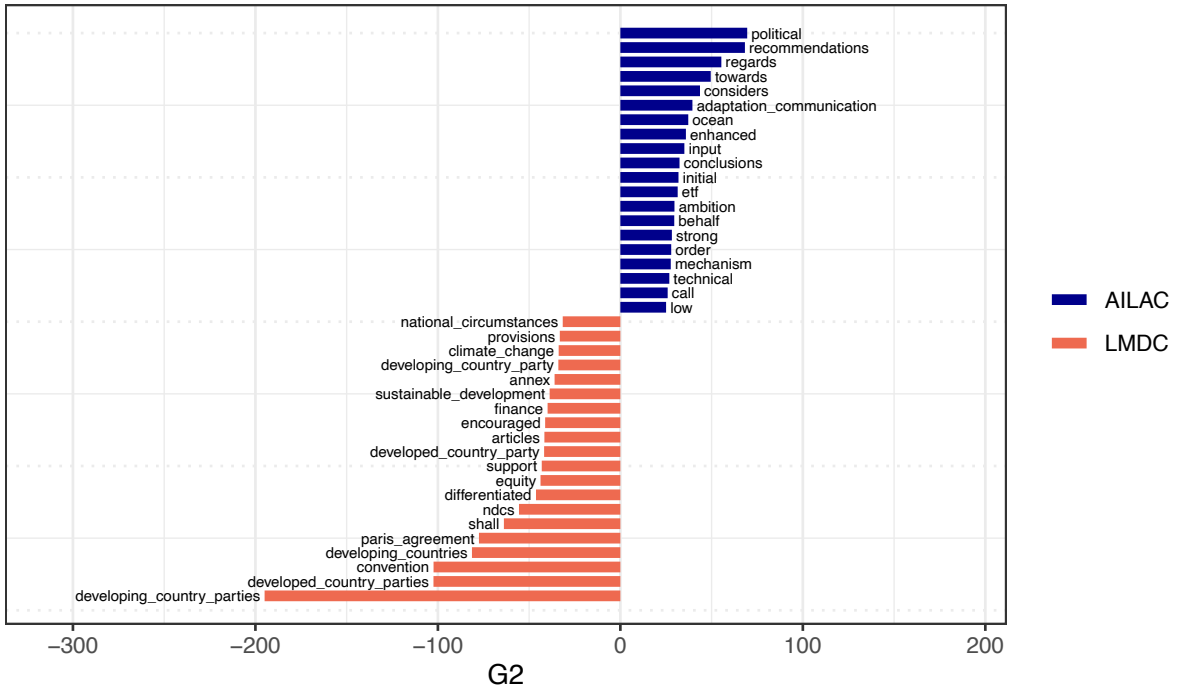


Fig. 3 Keyness of words, post-Paris period



Note: “etf” stands for "Enhanced Transparency Framework".

These findings support my first expectation that the main topics distinguishing LMDC’s discourse relate to differentiation and the relevance of the Convention’s annexes, but they do not support the corresponding expectation regarding the main topics in AILAC’s discourse. Rather than emphasizing the shared responsibility for mitigation or a new understanding of differentiation, AILAC simply seems to focus more on technical aspects of the negotiations.

Regarding the temporal evolution in the groups’ discourses, a first interesting finding is that for both groups, most keywords do not remain so for the duration of the three time periods. Only the term “low” is used by AILAC during the three time periods, referring most frequently to low carbon or low emissions development, economy or infrastructure. In addition, “REDD” is used by AILAC during both the pre-2012 and the pre-Paris periods, and “adaptation” or “adaptation communication” are used in the pre-2012 and post-Paris periods. All other key terms used by AILAC appear only in one of the time periods. This finding suggests that AILAC countries do not tend to remain fixated on one specific topic. Their language evolves over time, presumably in line with the evolution of the topics being discussed. In this broad sample of texts, and through keyness analysis I do not find evidence that AILAC’s discourse changes towards more progressive views, as outlined in the second expectation.

For LMDC, the only term that remains within their top-20 during the whole period is “Convention”. This is interesting, because, as explained above, the Convention is usually named in relation to its principles, annexes and provisions, all of which have to do with differentiation. Furthermore, the number of top words employed by LMDC that relate to differentiation increases markedly over time. While in the pre-2012 period they talk about “non-Annex” I countries, in the pre-Paris period they again mention “annex”, but also various iterations of “developed”

and “developing country parties”. After 2015, the terms “differentiated” and “equity” appear prominently in LMDC’s language in addition to developing and developed countries and annex. This suggests that the focus on differentiation increases over time, even after the Paris Agreement was adopted. These findings thus support our second expectation for LMDC.

5.2 Use of differentiation-related keywords and evolution of discourse over time

The most important results of the dictionary-based analysis are shown in Figures 4 and 5. Figures 6-8 in the Appendix offer further results on the motivations behind differentiation.

Figure 4 shows that words and expressions related to differentiation are on average much more frequently used by LMDC and its members than by AILAC and its members. In addition, the use of differentiation-related expressions by AILAC members clearly tends to decrease over time. In the pre-2012 period, AILAC members mention “differentiation” only within references to the CBDR principle. They typically hold the view that developed countries should lead in mitigation with ambitious economy-wide emission reduction commitments, while developing countries should contribute with voluntary actions. These actions may be undertaken unilaterally, in which case they would not be reviewed internationally, or with support from developed countries, in which case they would be subject to international monitoring and verification.

From 2014 onwards, the frequency of differentiation-related words in AILAC’s submissions as a group remains quite low and displays a decreasing trend over time. The results on the use of words related to the motivations behind positions on differentiation (see Appendix) show similar patterns. In general, AILAC and its members use expressions related to the principles behind differentiation, to the Convention and the Kyoto Protocol and to historical responsibility much less frequently than LMDC and its members. Also, AILAC as a group tends to use such words less frequently than its individual members, and such use remains constant or decreases over time.

While AILAC agrees with LMDC in affirming that universality of application does not mean uniformity, it argues for the implementation of a fair differentiation, which “must be between types of contributions”, rather than between types of countries (AILAC 2014: 4). This view is maintained in the post-Paris period, when the attention in the negotiations shifts to implementation. For mitigation, this means developing rules and guidance about what information to provide regarding mitigation targets, how to account for emission reductions, and how to report on achievements. In AILAC’s view, these rules and guidance should also be differentiated according to types of contributions (AILAC 2017a; AILAC 2017b). AILAC also repeatedly highlights “the need for all parties to be ambitious in contributing to global efforts” against climate change (AILAC 2014: 4).

Overall, these findings support the expectation that AILAC’s discourse changes towards more progressive views regarding differentiation over time, already before the Paris Agreement was adopted in 2015.

In the case of LMDC, Figure 4 shows that its two largest members, China and India, have kept a rather steady use of differentiation-related expressions over time, without any noticeable trends beyond fluctuations that naturally arise in the negotiations cycle. Other LMDC members or subgroups, in contrast, seem to display a slightly decreasing trend in their use of differentiation-related expressions over time, but again with stark fluctuations.

Interestingly, when LMDC as a group started producing its own submissions in 2013, it adopted a discourse that focuses on differentiation more strongly than any of its members, peaking in 2014, during the negotiations towards the Paris Agreement. In a crucial submission, LMDC insists "on retaining the Annexes as in the Convention. Differentiation between developed and developing countries has to be reflected as in the Annexes in the post-2020 outcome." (LMDC 2013: 2).

While the importance of differentiation-related words fell markedly in LMDC submissions after 2014, their share is still in the upper-end of the share in individual LMDC members' submissions, and well above the one for AILAC and its members. Hence, while I do not find the expected average rise in the rhetoric on differentiation by LMDC members, I do find that the rhetoric that LMDC as a group adopted in the post-2012 period was more pronouncedly about differentiation than that of its members' previous (and contemporaneous') submissions. Even in the post-Paris period, LMDC's positions on mitigation are still very much focused on differentiation. Their main message is that guidance for NDCs, for accounting and for reporting should be differentiated between developing and developed countries: "it is not efficient or productive to structure the (…) negotiations on the basis of different types of NDCs, which (…) [deviates] from the differentiation between developed and developing country Parties as enshrined in the Paris Agreement. All in all, developing guidance for information based on different types of NDCs will be unfair and onerous for developing country Parties." (LMDC 2017: 10).

With respect to expressions related to the principles behind differentiation, to the Convention and Kyoto Protocol and to historical responsibility (Appendix), LMDC as a group tends to use these expressions as frequently as its members. Interestingly, there seems to be a decreasing trend between 2013 and 2015-2016, followed by an increase up to 2018, as the rulebook for the Paris Agreement is negotiated. Overall, there is mixed support for the second expectation that LMDC's rhetoric on differentiation becomes more pronounced over time.

Regarding the heterogeneity in the groups' members' discourses on differentiation, I find support for the expectation that such heterogeneity is larger for LMDC than for AILAC members. This result is not fully visible in the graphs presented here, given that they present averages for the groups and their members (except for the individual graphs for China and India). However, this result was visible in similar analysis carried out separately for individual member countries (available on request), and in the qualitative analysis of positions.

Figure 5 presents corresponding results for the frequency of words related to the idea that mitigation should be a collective effort by all UNFCCC parties. Overall, their frequency is very low in all submissions analysed, but on average a bit larger for AILAC and its members than for LMDC. AILAC as a group also stands out for a comparatively stronger use of these expressions in the run-up to Paris, particularly in 2014 and 2015. However, given the overall low frequency of these words, this evidence is not sufficient to support the claim that AILAC offers a discourse highlighting the shared responsibility for mitigation by all parties.

Fig. 4 Frequency of words related to differentiation over time

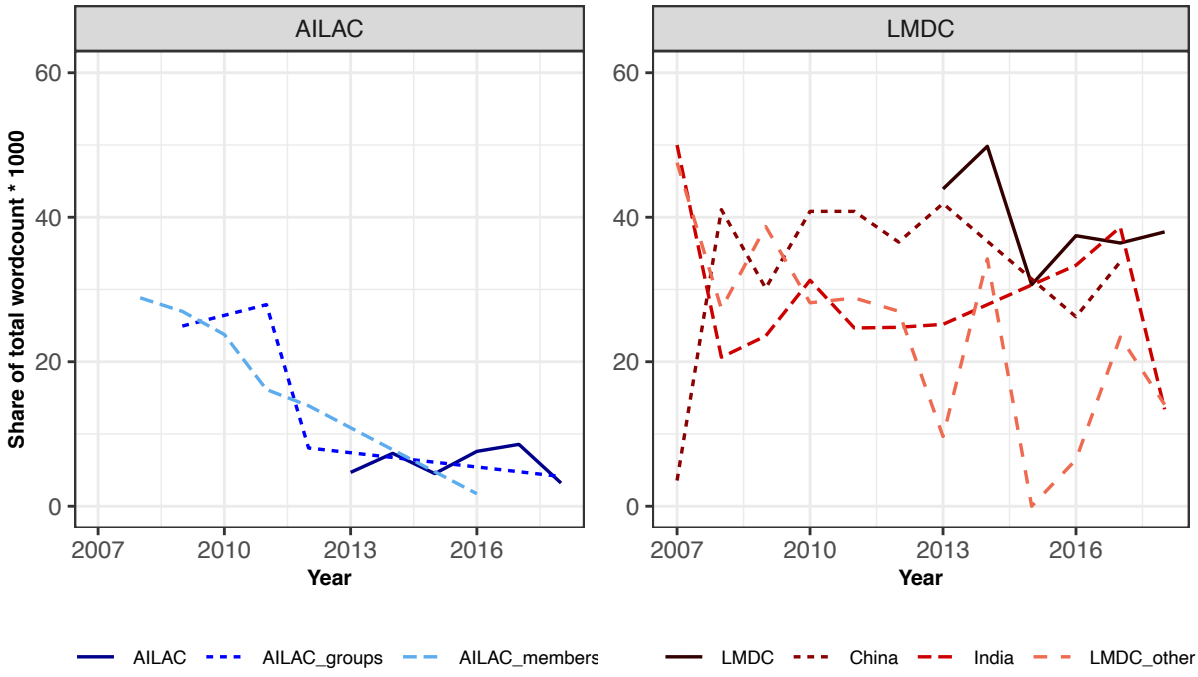
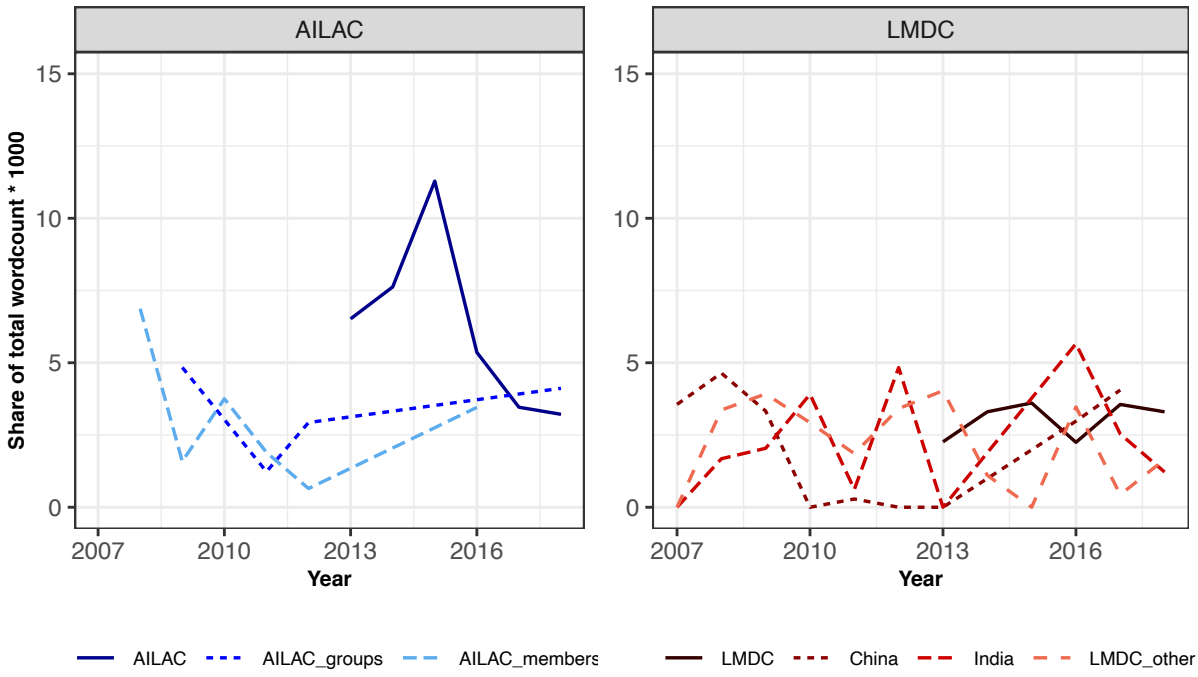


Fig. 5 Frequency of words related to collective effort over time



5.3 LMDC's and AILAC's ambition under the Paris Agreement

In this section I rely on existing analyses of countries' levels of ambition in their NDCs to draw some parallels between their political discourse as described above and their actual ambition.

According to the NDC Explorer (Pauw et al. 2016), only one AILAC member, Costa Rica, has an absolute emissions target. Costa Rica's NDC also claims to be consistent with the 2°C global temperature target. The Climate Action Tracker supports this claim, while Holz et al. (2018) assess Costa Rica's climate target as being consistent with a 1.5°C goal. Chile has an intensity target, meaning that its emissions reduction target is expressed relative to its income level. The actual level of emissions to be achieved thus depends on a projection of the country's future growth. Chile is ranked by the Climate Action Tracker as proposing a "highly insufficient" effort that is consistent with global warming of up to 4°C. Five other AILAC members have emission reduction targets that are expressed as a share of the expected future emissions under a scenario without climate policies ("business as usual"), which is also dependent on projections of the countries' future development. From these, Peru is considered by the Climate Action Tracker to have an insufficient target in line with up to 3°C of warming. Finally, only one AILAC member, Panama, has a mitigation contribution that does not rely on any type of target, but consists of a list of proposed policies and actions. No other AILAC member, beyond Costa Rica, is considered by Holz et al. (2018) to be consistent with a 1.5°C temperature goal. Thus, in terms of proposed ambition, AILAC members display a mixed track record, whereas only one of them can be considered to be sufficiently ambitious. This evidence does not support the expectation that AILAC members generally display a strong level of ambition.

Even though LMDC is a much larger country group, again only one of its members (Dominica) has proposed an absolute emissions target in its NDC. Four countries (China, India, Malaysia and Tunisia) propose intensity targets, whereas China also defines a date when its emissions are expected to peak. The vast majority of LMDC members (22 countries) propose targets based on business-as-usual emissions, and another large group (11 members) only proposes policies and actions. Of the five LMDC members that have been assessed by the Climate Action Tracker, Saudi Arabia's proposed contribution was ranked as critically insufficient (i.e. compatible with warming of more than 4°C), and Argentina and China were ranked as highly insufficient. India's and the Philippines' targets were considered as compatible with the global 2°C temperature target. This is somewhat surprising, particularly for the case of India, whose discourse in the negotiations is usually quite strong in emphasizing differentiation and the leading role that developed countries should take. Nonetheless, it may be partly explained by the fact that India's current level of emissions is still very low in per capita terms and by its important efforts in the area of renewable energy development that have been enabled by the substantially decreasing costs of these technologies. Interestingly, Holz et al. (2018) find that up to 18 LMDC members are proposing a fair target that is consistent with a 1.5°C goal, including the large emitters India and China (this last one in contrast to the Climate Action Tracker's assessment), but also small and poor countries such as Comoros, Dominica, Ghana, Sri Lanka and Yemen. Overall, these findings show that there is large heterogeneity in LMDC members' levels of ambition, and do not actually support the expectation that LMDC members generally display a weak level of ambition. Rather, it is a reflection of LMDC members' differing levels of development, reliance on fossil fuels and possibly also vulnerability towards climate change.

6. Conclusions

In this paper I studied the evolution of AILAC's and LMDC's discourses on burden sharing of mitigation commitments as the climate regime evolved from the annex-based dichotomy towards a system with mitigation contributions by all countries. Keyword-based text analysis methods, complemented with a qualitative reading of a subset of texts were used for the analysis. The method was found to be useful for identifying the groups' main discourses and their evolution.

Substantively, I was able to confirm the characterization of LMDC's discourse as one that highlights differentiation, the relevance of the Convention's annexes, and the historical responsibility of developed countries. The analysis also showed that LMDC's focus on differentiation was most pronounced in the run-up to the Paris Agreement, where the negotiation process put the old annex-based differentiation at risk.

The keyword-based analysis was not able to find sufficient evidence to support the idea that AILAC has a discourse highlighting the shared responsibility for mitigation by all parties. Rather, AILAC's submissions are usually focused on more technical aspects of the negotiations, and mention their views on collective efforts only as side remarks. Keyword-based methods that rely on word frequencies are not able to identify these subtleties in the texts. Nonetheless, the more focused dictionary-based and qualitative analysis does support the expectation that AILAC's discourse changes towards more progressive views on differentiation over time, particularly in the run-up to Paris.

All in all, the institutional change experienced in the climate regime has not been accompanied by a softening of views of key countries regarding differentiation. Differentiation is still very much in the minds of LMDC negotiators, and they continue to highlight the differences between developed and developing countries, and seek to structure discussions along these lines. In general terms, it requires more than institutional change to affect long-term interest-based positions.

In contrast with their discourse, I find that several LMDC members, including large emitters (though not the most oil-dependent economies) are actually quite ambitious in their proposed climate plans. It is interesting to see how despite growing fragmentation in the positions and interests of developing countries in the negotiations, and in the coalitions they build, the LMDC has managed to mobilize such a large group of countries around the traditional G77 positions, even though their individual positions and ambition are quite heterogeneous.

AILAC, on the other hand, while displaying the more progressive views, does not seem to propose more ambitious climate plans. Discourses and actual policymaking are, after all, not always in line with each other.

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Appendix

Table 3 Details of full and mitigation-focused text corpora

Negotiation body	Time period with submissions	Submissions by AILAC(*)	Submissions by LMDC(*)
Ad-Hoc Working Group on the Durban Platform	2012-2015	14 (9)	51 (39)
Ad-Hoc Working Group on the Paris Agreement	2016-2018	23 (7)	48 (12)
Conference of the Paris serving as the Meeting of the Parties to the Paris Agreement	2018	2 (0)	1 (1)
Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol	2007-2009	3 (0)	7 (3)
Conference of the Parties	2011-2013	0 (0)	21 (2)
Ad-Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol	2007-2012	10 (0)	57 (22)
Ad-Hoc Working Group on Long-Term Cooperative Action under the Convention	2008-2012	26 (11)	160 (59)
Total	2007-2018	78 (27)	345 (138)
Total number of words in the corpora	2007-2018	130025 (34733)	539316 (196958)

(*): Including submissions by individual members, subgroups of members, or by the whole coalition together with other groups. Numbers in parentheses refer to the mitigation-specific text corpus.

Note: Submissions made to the permanent subsidiary bodies of the UNFCCC, the Subsidiary Body for Implementation and the Subsidiary Body for Scientific and Technological Advice were not included, because these bodies are tasked with discussing and agreeing about implementation and science-related questions. The discussions in these bodies are thus less frequently related to the negotiations towards new agreements. In addition, it is likely that the language in submissions to these bodies would be more technical and less politically-loaded.

Fig. 6 Frequency of words related to principles for differentiation over time

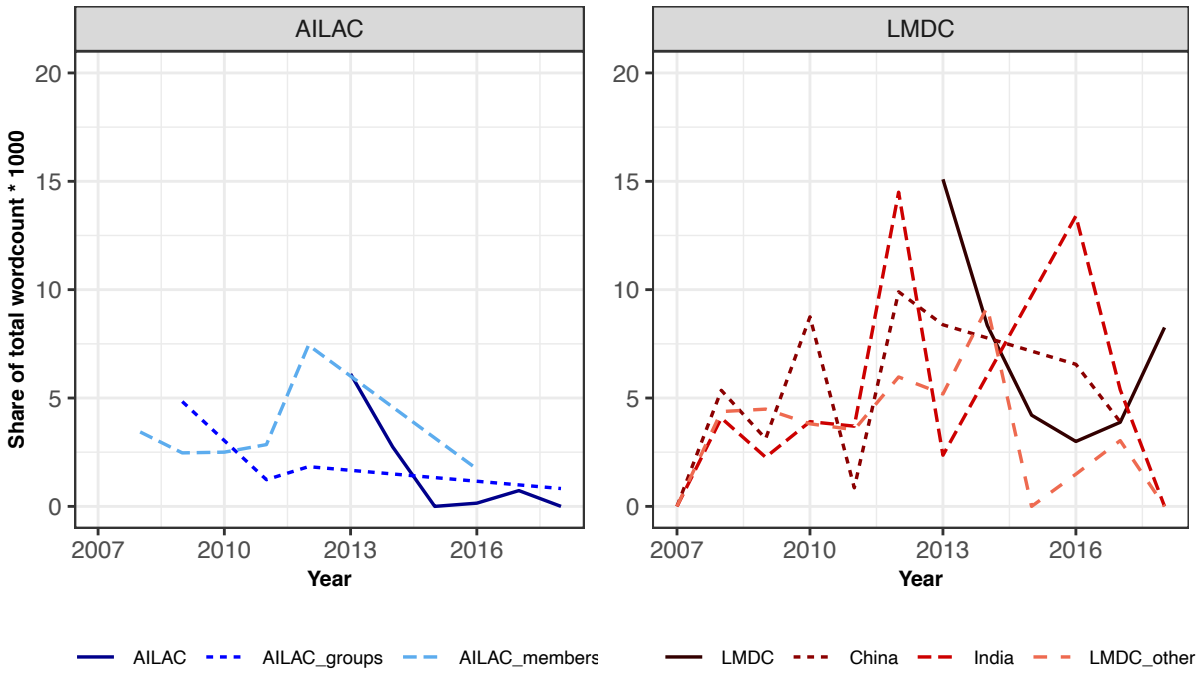

Fig. 7 Frequency of words related to past climate agreements over time

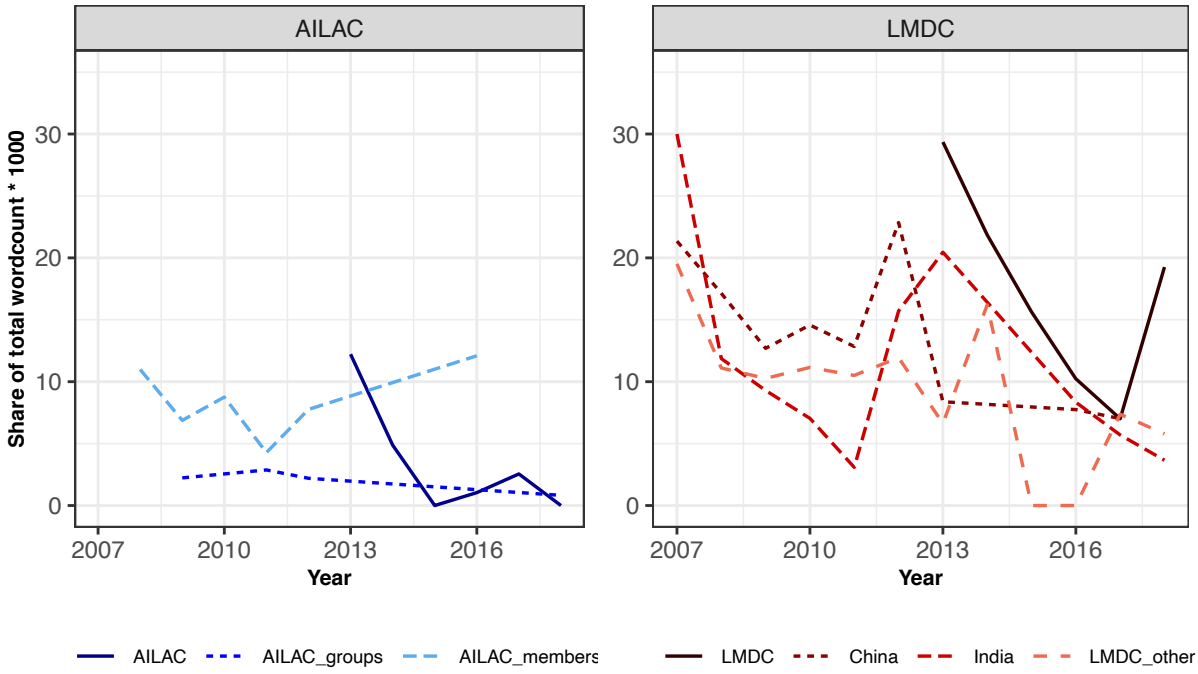

Fig. 8 Frequency of words related to historical responsibility over time